UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/631,320	07/31/2003	Charles Edward Bowers	30-4397DIV2	1906

7590 04/07/2006

Honeywell International Inc.
15801 Woods Edge Road
Colonial Heights, VA 23834

EXAMINER	
YAO, SAMCHUAN CUA	
ART UNIT	**PAPER NUMBER**
1733	

DATE MAILED: 04/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/631,320
Filing Date: July 31, 2003
Appellant(s): BOWERS, CHARLES EDWARD

Mr. Richard S. Roberts
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed on 02-07-06 appealing from the Office action mailed on 07-28-05.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

WITHDRAWN REJECTIONS

The following ground of rejection is not presented for review on appeal because it has been withdrawn by the examiner.

The rejection of claim 29 under 35 U.S.C. 102(b) as being anticipated by WO 99/14408 A1 has been withdrawn.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

The following is a listing of the evidence (e.g., patents, publications, Official Notice, and admitted prior art) relied upon in the rejection of claims under appeal.

WO 99/14408 A1, drawn to a process for making a blended wrapped carpet yarn for making a tufted cut-pile carpet, substantially teaches the claimed process. WO '408 differs from the claimed invention in that WO '408 uses twist-set yarns, while the claimed invention requires directly using a blended carpet yarn (i.e. untwisted) of WO '148.

JP 02300340 A, drawn to making a tufted cut-pile carpet, discloses a process of making a wrapped carpet yarn of a type which substantially similar to a wrapped carpet yarn of WO '408. A critical difference between JP '340 and the claimed invention is that, a wrapping yarn of JP '340 does not include heat-activated binder fiber.

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim 29-36 and 43-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2300340 A in view of WO 99/14408 A1.

JP '340 discloses a process of making a cut-pile tufted carpet, the process comprises providing a core conjugated strand having an untwisted polyester sliver (1) and filament yarn (2) arranged in parallel to each other; wrapping a filament yarn (3) around the conjugated strand to form a twist-free "trispinning

yarn" (6); tufting the yarn into a carpet backing to form a loop-pile carpet (figure 3); and, cutting the loop to form a cut-pile yarn (figures 1-3 and 5; English abstract; English translation: claims 1-4).

JP '340 does not teach: a) forming a wrapper yarn comprising a blend of heat-activated binder fibers and base synthetic fibers, the melting point of binder fibers is at least 20 °C lower than the melting point of the base fibers; b) heat-setting a resultant wrapped yarn; and, c) dyeing and finishing a resultant carpet. However, it would have been obvious in the art to replace a wrapping filament yarn suggested by JP '340 with a wrapper yarn comprising a blend of heat-activated binder fibers and base synthetic fibers, because WO '408, drawn to making a cut-pile tufted carpet, teaches the desirability of forming a wrapper yarn comprising a heat-activated binder fibers or a blend of heat-activated binder fibers and base synthetic fibers for making singles yarns (page 12-22; examples 3-4). The incentive for one in the art to make this modification would have simply been to obtain a self-evident advantage of providing a combination of mechanical and chemical (i.e. adhesive) binding instead of providing **only** mechanical binding to a core strand. As for the recited melting point and heat-setting step, these limitations would have been obvious in the art as such is well known as exemplified in the teachings of WO '408. See example 1 on page 6 of the WO '408 patent for the melting temperature range for base fibers and binder fibers and claim 16 of the WO '408 patent for the heat-setting step. As for the recited dyeing and finishing step, these limitations would have been obvious in the art as

such is notoriously well known in the art as exemplified in the teachings of WO '408 patent (page 4 lines 19-21 and page 6 12-14).

With respect to claims 30-36 and 43-48, see page 5 last paragraph to page 8 line 4 of the WO '408. Moreover, it is disclosed in WO '408 that "Denier per filament, cut length, ... softening point, melt point, dye affinity, and other properties are crucial to achieving ideal properties in the final product. ... optimum results from the finished carpet product. This will depend on numerous factors including the denier, length crimp, finish and other properties of the base fiber product.". (page 5 lines 25-31). In other words, the recited limitations in these claims are taken to be result effective variables, routinely optimized by experimentation, to obtain a desired characteristic of a finished carpet. Note that, claims 44-47 read on using 0 wt% of binder fibers. Therefore, absent any showing unexpected result, the limitations in these claims would have been obvious in the art.

Claims 29-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 99/14408 A1 in view of JP 2300340 A.

WO '408, drawn to making a tufted cut-pile carpet, discloses a process of making a yarn with a thermally activating binder material, the process comprises providing a continuous bundle of synthetic or natural base fibers; providing a wrapper yarn comprising a blend of heat-activated binder fibers and non-adhesive fibers; ring or wrap spinning the bundle of synthetic base fibers and the wrapper yarn to form a blended yarn; sufficiently heating the blended yarn to melt the binder fibers; and, then cooling the heat-treated yarn to solidify the heat-

activated binder fibers (page 6; examples 3-4; see page 3 lines 21-31 and claim 16 for heat-treating/heat-setting a *"wrapped singles yarn"*). See example 1 on page 6 for the melting temperature range for base fibers and binder fibers; and on page 4 lines 19-21 and page 6 12-14 for a dyeing and finishing step.

While not explicitly stated, the WO '408 patent as a whole would have reasonably suggested to one in the art that, although it is desired to use a twist heat-treated yarn as a carpet face yarn, such is not necessary as evidence from passages on page 3 lines 10-31, claims 1, 14-15 and 16. In other words, one in the art reading the WO '408 would have reasonably recognized and appreciated that, twist-free heat-treated yarn of WO '408 can effectively be used as a carpet face yarn. For this reason, this claim is taken to be anticipated by WO '408.

While WO '408 teaches manufacturing a heat-treated plied free yarn for tufting or a carpet face yarn (claims 1, 15 and 16), WO '408 does not explicitly disclose directly incorporating the heat-treated yarn into a carpet primary backing as loops. In any event, it would have been obvious in the art to directly incorporate a resultant heat-treated yarn (i.e. without forming a plied yarn) into a carpet primary backing as loops, because it is well known/conventional in the art of making a tufted cut-pile carpet to directly incorporate a twist-free wrapped yarn into a carpet primary backing as loops as exemplified in the teachings of JP '340 (abstract; figures 1-3 and 5). A preference on whether to use plied heat-treated singles yarn or heat-treated singles yarn is taken to be well with in the purview of choice in the art, absent any showing of unexpected result.

With respect to claims 30-48, see page 5 last paragraph to page 8 line 4 of the WO '408. Moreover, it is disclosed in WO '408 that "Denier per filament, cut length, ... softening point, melt point, dye affinity, and other properties are crucial to achieving ideal properties in the final product. ... optimum results from the finished carpet product. This will depend on numerous factors including the denier, length crimp, finish and other properties of the base fiber product.". (page 5 lines 25-31). In other words, the recited limitations in these claims are taken to be result effective variables, routinely optimized by experimentation, to obtain desired characteristics to a finished carpet. Note that, claims 44-47 read on using 0 wt% of binder fibers. Therefore, absent any showing unexpected result, the limitations in these claims would have been obvious in the art.

(10) Response to Argument

Appellant's arguments on page 5 to page 7 full paragraph 1 are moot, because the rejection of claim 29 under 35 USC 102(b) as being anticipated by WO '408 has been withdrawn.

On page 8 full paragraph 1, Appellant argued that the a blended wrapped yarn comprising a fibrous continuous synthetic or natural base and heat-activated binder wrapping yarn of WO '408 is further subjected to a standard twist setting operation under high temperatures; while the presently claimed invention requires "*untwisted* wrapped singles yarns which comprise a base synthetic fiber wrapper yarn containing heat activated binder material". Accordingly, "[a] key feature of the present invention is that such yarns are untwisted". Examiner

agrees. That's precisely the reason why the rejection of claim 29 under 35 USC 102(b) as being anticipated by WO '408 has been withdrawn. However, the issue here is whether or not it would have been obvious in the art to directly use a blended wrapped yarn of WO '408 (i.e. untwisted) as tufting yarn for making carpets. It is respectfully submitted that, in view that it is old in the art of making a tufted cut-pile carpet to form a wrapped yarn (i.e. tri-spun yarn) comprising a base strand and wrapping yarn as exemplified in the teachings of JP '340 (English translation; claims 1-4; page 3; figures 2-3 and 5), it would have been obvious in the art to directly tuft a blended wrapped yarn (i.e. without twist setting) to a backing to form a tufted carpet. Accordingly, a tufted cut-pile carpet of JP '340 has rich in design effect at a low cost and "having a delicate and graceful appearance, excellent covering property, and superior pill resistance ..." (English translation; page 3 full paragraph 1). A preference on whether to use plied wrapped singles yarn or wrapped singles yarn for making tufted carpet is taken to be well with in the purview of choice in the art, absent any showing of unexpected result.

As for Appellant's argument on page 9 full paragraph 1, contrary to what Appellant appears to infer, Examiner did not only "selectively pick and choose various elements ... of several references" without presenting any line of reasoning. Examiner strongly disagrees. Not only WO '408 and JP '340 are directed to making tufted cut-pile carpet, there is a strong resemblance/similarity between the yarn structure of a wrapped yarn suggested by JP '340 and a

blended wrapped yarn WO '408. Therefore, since it is old in the art of making a tufted cut-pile carpet to directly tuft a wrapped yarn without any twisting to a carpet backing as taught by JP '340, one in the art would have reasonably expected that one can effectively form a cut-pile carpet of WO '408 without twist setting the yarn.

On page 8 last paragraph, Appellant argued that while JP '340 teaches tufting a blended wrapped yarn, without twisting, to a carpet backing, "... there is nothing in either cited reference which shows that such a combination would or could be successful. Examiner strongly disagrees. As has been noted above, not only WO '408 and JP '340 are directed to making tufted cut-pile carpet, the basic structure of a blended wrapped yarn of WO '408 and a wrapped yarn (i.e tri-spun yarn) is quite similar. The only critical difference between the yarn of WO '408 and JP '340 is that, a wrapping yarn JP '340 does not include a heat-activated binder component. In view of this, one in the art reading the collectively teachings of WO '408 and JP '340 would have reasonably expected that the blended wrapped yarn of WO '408 without twist setting could or would successfully be used as a tufting yarn for a carpet backing. In other words, the teachings of WO '408 and JP '340 taken together would have reasonably suggested to one in the art that untwist heat-set yarn of WO '408 is an effective alternative to twisted heat-yarn for making a face yarn for a tufted cut-pile carpet. Equally important, a filament yarn (3) suggested by JP '340 is used to mechanical bind a sliver (1) and filament yarn (2) together to form a conjugate yarn for use as a tufted carpet face

yarn. One in the art reading the collective teachings of JP '340 and WO '408 would have been motivated to replace a filament binding yarn suggested by JP '340 with a bindng wrapper yarn taught by WO '408 so that the sliver (1) and filament yarn (2) are not only mechanically bound together, but also chemically (adhesively) bound.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

scy

Conferees:

Richard Crispino

Steven Griffin